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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/640,514	08/17/2000	Frank J. DiSanto	Copy-51	6300

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EXAMINER

EISEN, ALEXANDER

ART UNIT

PAPER NUMBER

2674

DATE MAILED: 07/30/2002

5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/640,514

Applicant(s)

DISANTO ET AL.

Examiner

Alexander Eisen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-8, 10-20, 22 and 24-33 rejected under 35 U.S.C. 102(b) as being clearly anticipated by Ota, US Patent No. 3,668,106.

In regard to claims 1, 15, 16, 18, 19 and 28, Ota discloses a multi-color electrophoretic image display comprising a first electrode Y (FIGS. 7 and 12a,b,c, column 6, lines 1-38) defining a plurality of cells at the intersection of electrode Y with a plurality of electrodes X, a second transparent electrode X, separated from first electrode by space, an electrophoretic fluid (suspension layer 22) disposed between the first and second electrodes, the electrophoretic includes a plurality of particles dispersed in the cells of the first electrode being movable to and from adjacent positions on the transparent and reflect light entering the display thereby forming an image, which can be more than one color.

As to claim 2, Ota teaches the transparent second electrode X includes rows of electrically conductive transparent electrode lines (col.6, lines 11-14 and col. 10, lines 37-44).

As to claims 3 and 4, cells define electrically conductive electrode pads that are elongated (strips X and Y).

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As to claim 5, Ota teaches that cells could be of variety of different shapes including a square or rectangular.

As to claims 6, 7, 10, 11, 17, 24, 25, 26, 29, 30 and 32, Ota teaches that a colored display can be achieved by using multicolor filters formed on transparent upper housing wall, including red, blue and green colors, or, as an alternative, in order to produce even better color images by using different colors of suspensions (col. 10, lines 52-62).

As to claims 8, 27 and 31, Ota teaches light electrophoretic material (col. 3, lines 63-66).

As to claim 12, Ota discloses spacers 38 and 40 for retaining a electrophoretic fluid 22.

As to claim 13, as can be seen in FIGS. 8 and 12b, the spacer 38 is slightly taller than the cells enclosing electrophoretic material 22.

As to claim 14, each of the cells forms a picture element or pixel (col. 10, lines 45-51).

As to claim 20 and 33, all three different colors of pixels are disposed in the same plane as shown in FIGS. 12a-c.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ota in view of Check III et al., US 5,467,217.

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Ota discloses a multi-color electrophoretic image display comprising a first electrode Y defining a plurality of cells at the intersection of electrode Y with a plurality of electrodes X, a second transparent electrode X, separated from first electrode by space, an electrophoretic fluid disposed between the first and second electrodes, the electrophoretic includes a plurality of particles dispersed in the cells of the first electrode being movable to and from adjacent positions on the transparent and reflect light entering the display thereby forming an image, which can be more than one color.

Check III et al. teaches that the particles coated with a solid polymeric can be used in an electrophoretic display (col. 1, lines 20-52, col. 4, lines 5-18 and col.8, lines 10-25).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the particles in the electrophoretic display coated with a polymer as taught by Check III et al., because polymeric stabilizers improve the display by reducing the tendency of particles to agglomerate and keep them dispersed (col. 1, lines 63-67).

5. Claims 21, 23 and 34 rejected under 35 U.S.C. 103(a) as being unpatentable over Ota in view of Iwanaga et al., ("Iwanaga"), US Patent No. 5,739,946.

Ota discloses a multi-color electrophoretic image display comprising a first electrode Y defining a plurality of cells at the intersection of electrode Y with a plurality of electrodes X, a second transparent electrode X, separated from first electrode by space, an electrophoretic fluid disposed between the first and second electrodes, the electrophoretic includes a plurality of particles dispersed in the cells of the first electrode being movable to and from adjacent positions on the transparent and reflect light entering the display thereby forming an image, which can be more than one color.

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Ota does not disclose, however, that the pixels of different color can be disposed in different planes.

Iwanaga teaches a display device, wherein three layers of cells are used for realizing the color display (see FIG. 28, column 20, lines 25-64).

At the time of the invention it would have been obvious to one of ordinary skill in the art to use the alternative structure for the color display device of Ota as taught by Iwanaga, because it allow to display different colors by a single pixel and therefore to obtain a good quality of a color display (col. 20, lines 55-59).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Gordon II, et al., US 6,271,823, discloses a reflective three-color electrophoretic display.

Evans et al., US 3,612,758, discloses an electrophoretic color display.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Eisen whose telephone number is **(703) 306-2988**.

The examiner can normally be reached on M-F (9:00 a.m - 4:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard A. Hjerpe can be reached on **(703) 305-4709**.

Any response to this action should be **mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

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or **faxed to:**

(703) 872-9314 (for Technology Center 2600 only).

Hand-delivered responses should be **brought to:** Crystal Park Two, 2121 Crystal Drive, Arlington, Virginia, Sixth Floor Receptionist.

Any inquiry of a general nature or relating to the status of this application or proceeding should be **directed to:** Technology Center 2600 Customer Service Office, whose telephone number is **(703) 306-0377**.

AE

Alexander Eisen
July 15, 2002



RICHARD HJERPE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600